

Rock glaciers on South Shetland Islands, Antarctic Peninsula, Version 1

USER GUIDE

How to Cite These Data

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Serrano, E., J. Lopez-Martinez, J.M.G. Casado, J.J. Duran, E. Martinez de Pison, and P. Nicolos 1998. *Rock glaciers on South Shetland Islands, Antarctic Peninsula, Version 1*. [Indicate subset used]. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. <https://doi.org/10.7265/h6x0-a892>. [Date Accessed].

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National Snow and Ice Data Center

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Notice: This data set was first published on the [1998 CAPS CD](#).

The text for this document was taken unchanged from that CD.

In the South Shetland Islands we have found eight active rock glaciers, no relict or fossil examples, and seven protalus ramparts. The rock glaciers are located on peninsulas and capes of the two main islands of the archipelago: King George and Livingston. The South Shetland Islands have a cold oceanic climate, characteristic of the maritime Antarctica, with frequent summer rains and moderate thermal amplitude, and a cold and humid morphoclimatic system, of crinival character. These climatic parameters facilitate the operation of periglacial processes, and the presence of a usually saturated active layer in summer. In the South Shetland Islands the presence of rock glaciers have been identified on Livingston Island (Martinez de Pison et al., 1991; Lopez-Martinez et al., 1992a, 1992b), on Admiralty Bay, in King George Island (Birkenmajer, 1981; Barsch et al., 1985) and in Fildes Peninsula (Barsch et al. 1985; Barsch, 1996; Cheng et al., 1996). Four further active rock glaciers have been identified during the present study in King George and Livingston Island (Serrano and Lopez-Martinez, in prep.). The rock glaciers are located in marginal zones, between 300 m a.s.l. and sea level, which has been recently deglaciated, and principally under 70 m a.s.l, near 100 m under the Median Equilibrium Line Altitude (M.E.L.A.). There are indications of a recent diminution of activity, with blurred fronts, mass movements in fronts and sides, lichen colonization and glaciokarstic processes. All of these indicate an inherited dynamic of past conditions in lower altitudes.

References to rock glaciers are scarce in Antarctica, limited to a few examples in the Transantarctic Mountains, Victoria Land, South Georgia, James Ross Island and South Shetland Islands. The spatial pattern of rock glaciers indicates that they are more represented in the periphery of Antarctica than in the interior of the continent, and are particularly numerous in the Antarctic Peninsula region.

1 DETAILED DATA DESCRIPTION

- File: antarcrq.dat
- Comments: Inventory data on 7 rock glaciers
- File: keller.gif
- Comments: Photo of rock glacier in Keller Peninsula, Admiralty Bay, King George Island, South Shetland Island, Antarctica
- File: renier.gif
- Comments: Photo of Renier rock glacier, Livingston Island, South Shetland Island. (Antarctica).

1.1 Current Storage of Data

CD-ROM	
Paper	X
Spreadsheet	
Wordprocessor file	X
Database	

Figure 1. Data Storage

1.2 Spatial Coverage

1.2.1 Study location:

South Shetland Islands (Antarctica)

1.2.2 Geographic extent:

Northwest Latitude: 61.9836 S

Northwest Longitude: 62.75 W

Southeast Latitude: 63.667 S

Southeast Longitude: 57.667 W

1.3 Temporal Coverage

1.3.1 Period of investigation:

Inventory of rock glaciers: 1994-1997

2 REFERENCES AND RELATED PUBLICATIONS

BARSCH, D.1996. Rochglaciers. Indicators for the present and former geocology in high mountain environments. Springer Verlag, Berlin. 331 p.

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CHENG, Z., ZHIJIU, C.; JIANXIN, Z.1996. Relationship between the distribution of periglacial landforms and glaciation history, Fildes Peninsula, King George islands Antarctica. *Permafrost and Periglacial Processes*, 7 : 95-100.

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4 DOCUMENT INFORMATION

4.1 Publication Date

1998

4.2 Date Last Updated

2021